

comprises a P4H protein that complements the wild-type P4H gene mutation, and

b) observing the effect of the test compound on the prolyl 4-hydroxylase activity of the progeny of the test nematode, P4H-deficient titled nematode or the wild-type nematode, wherein a loss of embryonic lethal phenotype indicates prolyl-4-hydroxylase inhibition.

3. The method of claim 1, wherein the test compound is a chemical.

3. (Amended) The method of claim 1, wherein the test compound is a protein or peptide.

4. The method of claim 1, wherein the introduction of the test compound involves placing the nematode in a solution containing the test compound.

5. The method of claim 1, wherein the test compound is introduced into a wild-type nematode and the observation of a pupal or embryonic lethal phenotype indicates nematode prolyl 4-hydroxylase inhibition.

6. The method of claim 1, wherein the test compound is introduced into a P4H-deficient titled nematode

claim 1. The observation of a dpy or embryonic-lethal phenotype indicates P4H inhibition.

7. The method of claim 1, wherein the introduction of a test compound into a test chimeric nematode and the observation of dpy or embryonic-lethal phenotype indicates non-native prolyl 4-hydroxylase inhibition.

8. Amended) The method of claim 1, wherein the test chimeric nematode is a C. elegans and harbors a dpy-18 mutation.

9. The method of claim 1, wherein the observation of a dpy phenotype indicates that the test compound modulates the P4H gene found on chromosome III.

10. (Amended) A method for evaluating a test compound's ability to modulate prolyl 4-hydroxylase, comprising the step of:

- a. introducing a test compound into a chimeric nematode comprising a dpy-1 or dpy-18 mutation phenotype, and
- b. observing the effect of the test compound on the prolyl-4-hydroxylase activity of the prolyl 4-hydroxylase-deficient, wherein the result of the

Claim
15. A pyridin-4-pyrol-pyran-type inhibitor at increased level of poly-4-hydroxylase activity.

16. The method of claim 1 wherein the test compound is part of a combinatorial chemical library.

17. The method of claim 16 wherein the test compound is part of a combinatorial library.

18. (Amended) A method for evaluating a test compound's ability to modulate P4H, comprising the steps of:

(a) introducing a test compound into a test chimeric *Caenorhabditis elegans*, a P4H-gene modified *Caenorhabditis elegans*, or a wild-type *Caenorhabditis elegans*, wherein the test chimeric *Caenorhabditis elegans* has a complemented P4H gene mutation, and

(b) measuring the level of P4H activity of the progeny of the test *Caenorhabditis elegans*, P4H gene modified *Caenorhabditis elegans* or wild-type *Caenorhabditis elegans*, wherein a lower P4H activity compared to untested control *Caenorhabditis elegans* indicates that the test compound is an inhibitor of P4H.